Remarks

In response to the Final Office Action mailed February 11, 2009 (hereafter "Office Action"), no claims have been amended, cancelled, or newly added. Accordingly, claims 1-16, 18-20, 22-37 and 39-41 are pending.

Reconsideration and allowance based on the following remarks are respectfully requested.

As a preliminary matter, Applicant wishes to thank the Examiner for the indication of allowable subject matter in claims 13-15 and 34-36.

Rejections under 35 U.S.C. §§ 102 and 103

A.   Claims 1-12, 16-19, 22-33 and 37-40 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication No. 2003/0048458 to Mieher ("Mieher"). Applicant traverses this rejection for at least the following reasons.

Under 35 U.S.C. § 102, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Moreover, "unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102." *Net MoneyIN, Inc. v. VeriSign, Inc. et al.*, Slip Op. pg. 17-18 (Fed. Cir., October 20, 2008).

Applicant submits that the cited portions of Mieher do not teach or disclose a method for determining at least one process parameter in a device manufacturing process comprising, *inter alia*, determining a mathematical model by using said known values of said at least one process parameter and by employing a multi-variant regression technique on said calibration spectral measurement data, said mathematical model comprising a number of regression coefficients; obtaining

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spectral measurement data from at least one marker structure provided on an object, said at least one marker structure being made using an unknown value of said at least one process parameter; and comparing the obtained spectral measurement data with the calibration spectral measurement data to determine the unknown value of said at least one process parameter for said object from said obtained spectral measurement data by employing said regression coefficients of said mathematical model, as recited in claim 1.

For example, the Office Action relies upon paragraph [0080] of Mieher to allegedly teach employing a regression technique on the calibration spectral measurement data. [See Office Action, pgs. 3-4]. However, the cited portions of Mieher use regression for a different purpose than claimed. For example, Mieher discloses that *"the scatterometry data (e.g., measured spectra) is interpreted into shape parameter information. This may be accomplished using iterative regression techniques* and/or by library matching techniques such as those previously described, i.e., match the measured spectra with libraries that link profiles with spectra." [Mieher, ¶ 80 (emphasis added)].

The Office Action, however, further contends that because Mieher discloses that shape parameters may be used to produce calibration data and shape parameters are obtained by a regression technique, that it follows that "Mieher apparently teaches employing the regression technique on the calibration measurement data." [Office Action, pg. 2]. Applicant disagrees with these assertions for at least the following reasons.

First, Applicant does not merely recite employing a regression technique on the calibration measurement data. Rather claim 1, for example, specifically recites "comparing the obtained <u>spectral</u> measurement data with the calibration <u>spectral</u> measurement data to determine the unknown value of said at least one process parameter for said object from said obtained spectral measurement data by employing said regression coefficients of said mathematical model." (emphasis added).

Second, Applicant submits that shape parameter information is <u>not</u> the same as spectral measurement data. In fact, the cited portions of Mieher recognize this as well. For example, paragraph [0080] of Mieher specifically discloses that <u>measured spectra data is converted into shape parameter information</u>. Also, as

shown in Figure 13 of Mieher (reproduced below), both the calibration spectral measurement data and obtained spectral measurement data are first converted into shape parameters (steps 308 and 316) and then the resultant shape parameters are subsequently compared (step 318). Tellingly, Figure 13 of Mieher does not show "comparing the obtained _spectral_ measurement data with the calibration _spectral_ measurement data to determine the unknown value of said at least one process parameter for said object from said obtained spectral measurement data by employing said regression coefficients of said mathematical model."
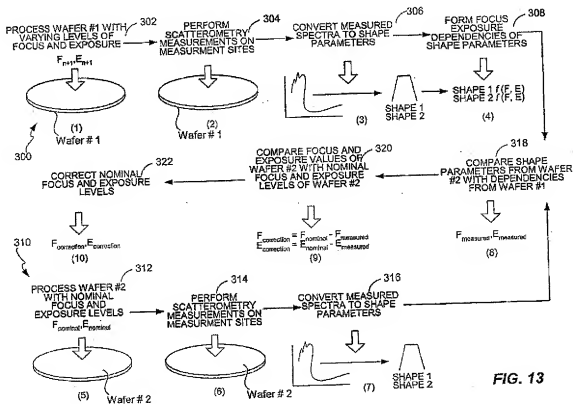

FIG. 13

By contrast, Applicant's claimed invention specifically uses spectral measurement data, rather than shape parameters, for comparing obtained spectral measurement data with calibration spectral measurement data. This is clearly shown, for example, in the embodiment shown in Figure 4 of Applicant's Specification (reproduced below). As such, Applicant's claimed invention does not need to convert spectral measurement data into shape parameters for subsequent comparison.

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Fig 4
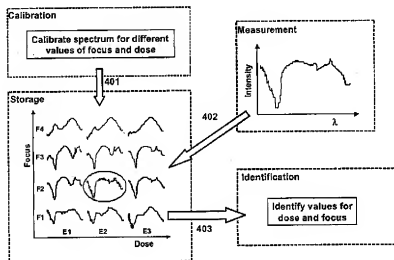
Therefore, for *at least* the foregoing reasons, Applicant submits that each and every feature of claim 1 has not been shown by the Office to be anticipated by Mieher. In particular, the Office Action has not shown how the cited portions of Mieher allegedly teach "comparing the obtained spectral measurement data with the calibration spectral measurement data to determine the unknown value of said at least one process parameter for said object from said obtained spectral measurement data by employing said regression coefficients of said mathematical model."

In addition, Applicant submits that each and every element of claim 22 has not been shown for reasons that should be apparent from the discussion of claim 1 above. Applicant therefore, submits that the cited portions of Mieher do not teach or disclose each and every feature of claim 22, either.

Therefore, Applicant respectfully submits that a case of anticipation has not been established and that the cited portions of Mieher fall to disclose or teach each and every feature recited in claims 1 and 22. Claims 2-12, 16-19, 23-33 and 37-40 depend from claims 1 and 22, respectively, and are therefore, patentable for at least the same reasons provided above related to claims 1 and 22 and for the additional

features recited therein. Thus, Applicant respectfully requests that the rejection of claims 1-12, 16-19, 21-33 and 37-40 under 35 U.S.C. § 102(e) over Mieher should be withdrawn and the claims be allowed.

B.   Claims 20 and 41 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mieher in view of U.S. Patent Application No. 6,917,901 to Bowley, Jr et al. ("Bowley"). Applicant traverses this rejection for at least the following reasons.

As discussed above, the cited portions of Mieher do not teach or disclose each and every feature of claims 1 and 22.

Further, Applicant submits that the cited portions of Bowley do not overcome the deficiencies of Mieher noted above. For example, the Office Action relies upon Bowley to allegedly show a support structure configured to support a patterning structure and a substrate table configured to hold the substrate. [*See* Office Action, pg. 6].

Therefore, Applicant respectfully submits that a *prima facie* case of obvious has not been established and that the cited portions of Mieher, Bowley, or a proper combination thereof, fail to disclose or otherwise render obvious each and every feature recited in claims 1 and 22. Claims 20 and 42 depend from claims 1 and 22, respectively, and are therefore, patentable for at least the same reasons provided above related to claims 1 and 22 and for the additional features recited therein. Thus, Applicant respectfully requests that the rejection of claims 20 and 41 under 35 U.S.C. § 103(a) over Mieher in view of Bowley should be withdrawn and the claims be allowed.

Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.
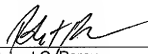
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If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Please charge any fees associated with the submission of this paper to Deposit Account Number 24-0037. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Date: April 22, 2009

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